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# PATENT ABSTRACTS OF JAPAN

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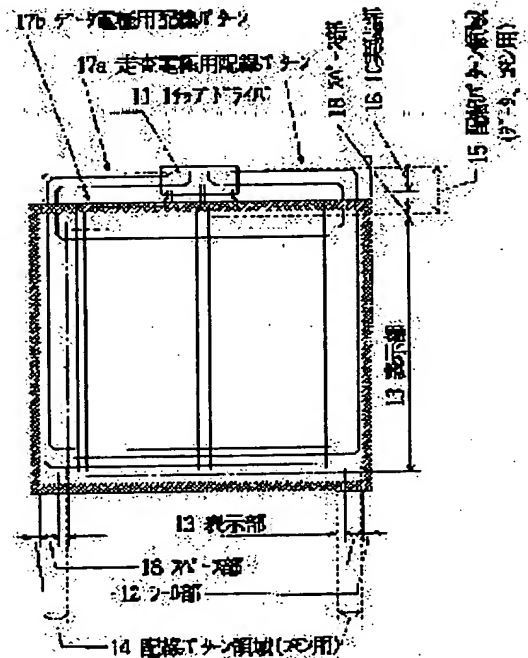
(72)Inventor : SUGURO AKIRA

## (54) LIQUID CRYSTAL DISPLAY DEVICE

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To narrow the non-display regions by wiring patterns and to obtain a liquid panel of a narrow picture frame by using a semiconductor chip integrated with a common driver and a data driver and effectively utilizing a non-display region.

**SOLUTION:** A one chip driver 11 is a circuit integrated with the ordinary common driver and data driver. The one chip driver is packaged on a first substrate formed with scanning electrodes or a second substrate formed with data electrodes. The second substrate formed with the data electrodes or the first substrate formed with the scanning electrodes facing each other are connected by a conductive seal. The long sides of the one chip driver 11 are arranged at the center of the data electrodes in parallel with the scanning electrodes. The scanning electrode wiring patterns 17a are so arranged as to hold the data electrode wiring patterns 17b at the center. The scanning electrode wiring patterns 17a are so arranged as to pass right under the one chip driver 11. The wiring patterns are confined within the region of half the product of the conventional wiring pitches and the number of the scanning lines.



## LEGAL STATUS

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